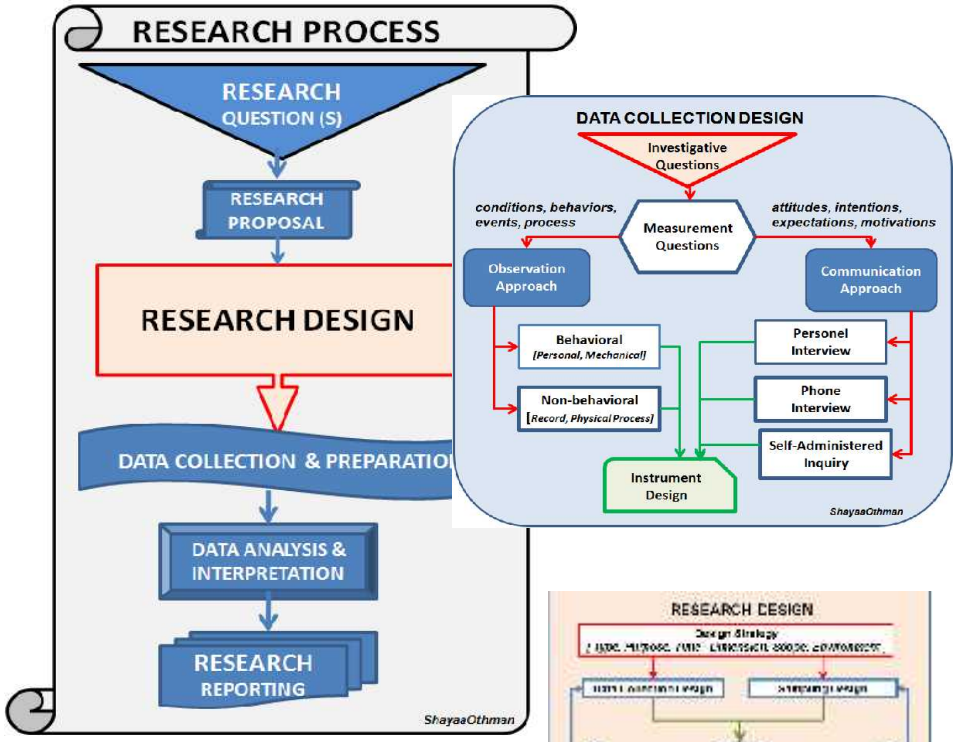

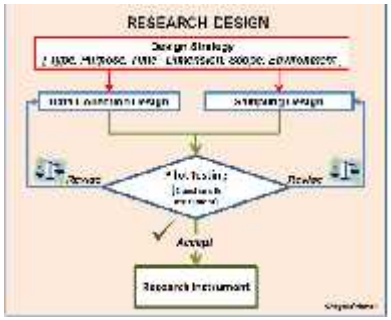

Research Methodology

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The Florida **University USA (Fl, Boca Raton - USA)** is a public research

Department of Education

Types of Research

1. Pure and Applied Research
2. Qualitative and Quantitative Research
3. Research Process
4. Research Proposal
5. Ethics in Research

OVERVIEW OF DISCUSSION : RESEARCH METHODOLOGY

- ✓ **Research Process – Formulating of Research Question [s]**
- ✓ **Research Process – Research Proposal**
- ✓ **Research Process – RESEARCH DESIGN**
- ✓ **Research Design – Design Strategy**
- ✓ **Research Design - Qualitative & Quantitative Research**
- ✓ **Research Design - Data Collection Design**
- ✓ **Research Design – Sampling Design**
- ✓ **Research Design – Pilot Testing**
- ✓ **Research - Research Hypotheses**
- ✓ **Research - Characteristics of Sound Research**

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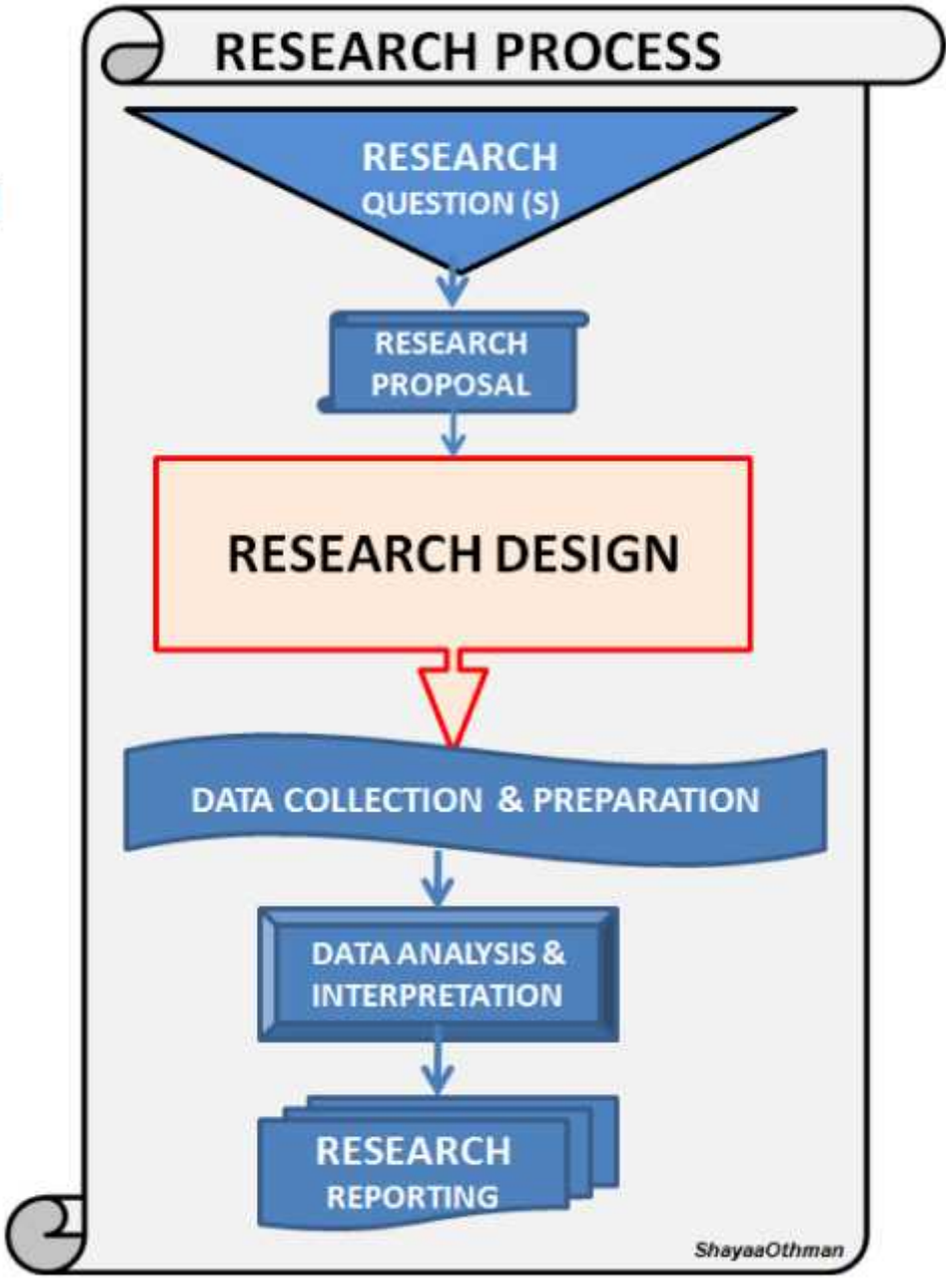
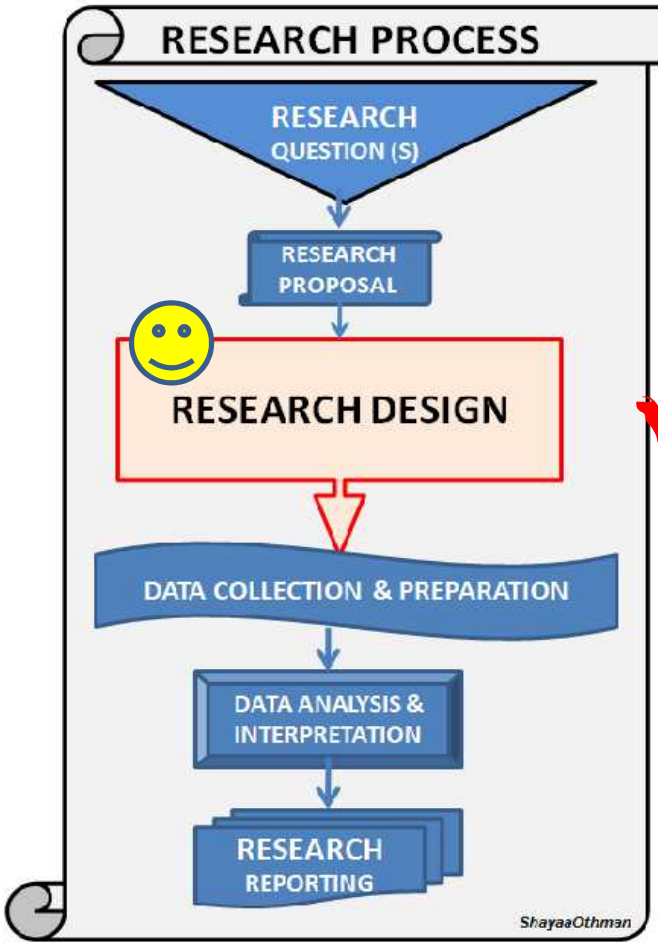




RESEARCH

PROCESS

DEFINATION

Applied

Pure

APPLIED RESEARCH

Study & research that seeks to solve practical problems. Applied research is used to find solutions to everyday problems, cure illness, and develop innovative technologies.

PURE RESEARCH

Study and research on pure science that is meant to increase our scientific knowledge base. This type of research is often purely theoretical with the intent of increasing our understanding of certain phenomena or behavior but does not seek to solve or treat these problems.

ETHICS

ETHICAL ISSUES

1. **Participants**
   - *Truthful*
   - *Right to Privacy*
   - *Right to be informed*
   - *Protection*
2. **Researcher**
   - *Purpose of Research is Research*
   - *Objectivity*
   - *Misrepresentation of Research*
   - *Confidentiality*
   - *Dissemination of Faulty Conclusion*

TYPES

Quantitative + Qualitative

Qualitative

Quantitative

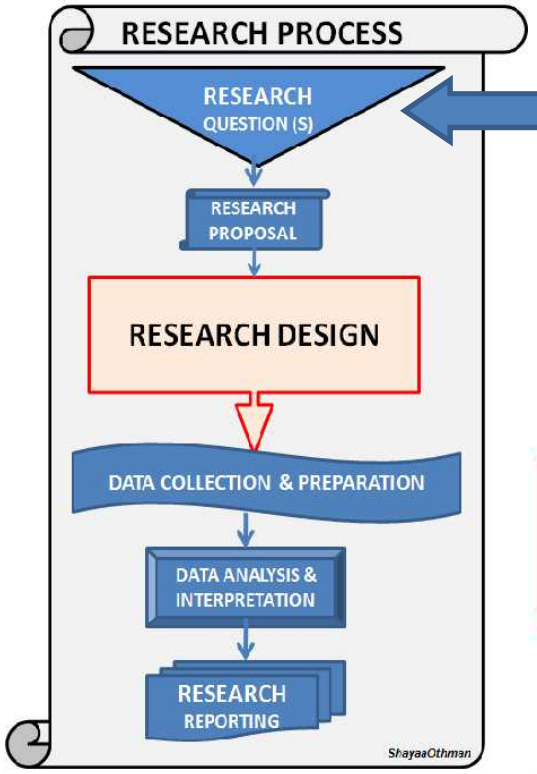
Mix Quantitative & Qualitative Research

Qualitative Research

Quantitative Research

1. PROCESS OF FOURMULATING RESEARCH QUESTION [S]

[Proses Menggubal Soalan Penyelidikan]



1 DISCOVER PROBLEMS

Either a problems or opportunities. May have identified symptoms rather than problems or symptoms.

A

EXPLORATION
Literature review, and discussion with relevant people.

2 DEFINE QUESTION ☑

Using collected information transform the problems into question form "How can the subject A.....?

B

EXPLORATION
Clarifying possible actions. Interviewing & discussion / brainstorming with experts.

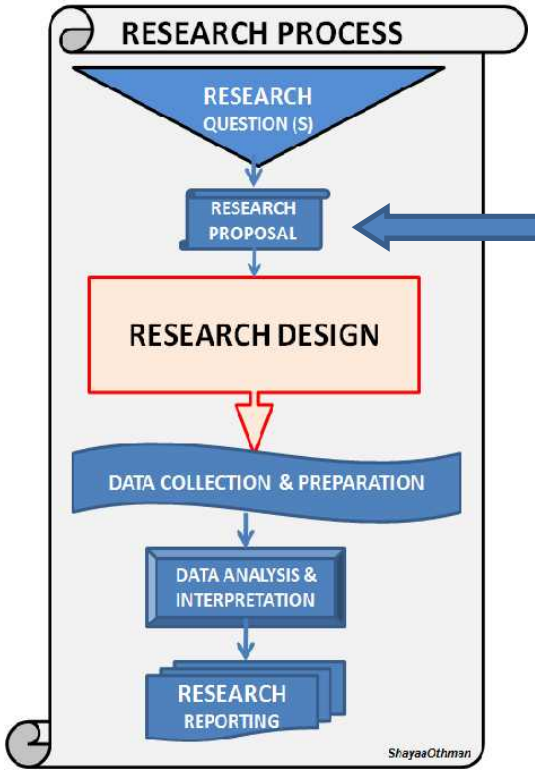
3 DEFINE RESEARCH QUESTION [S]

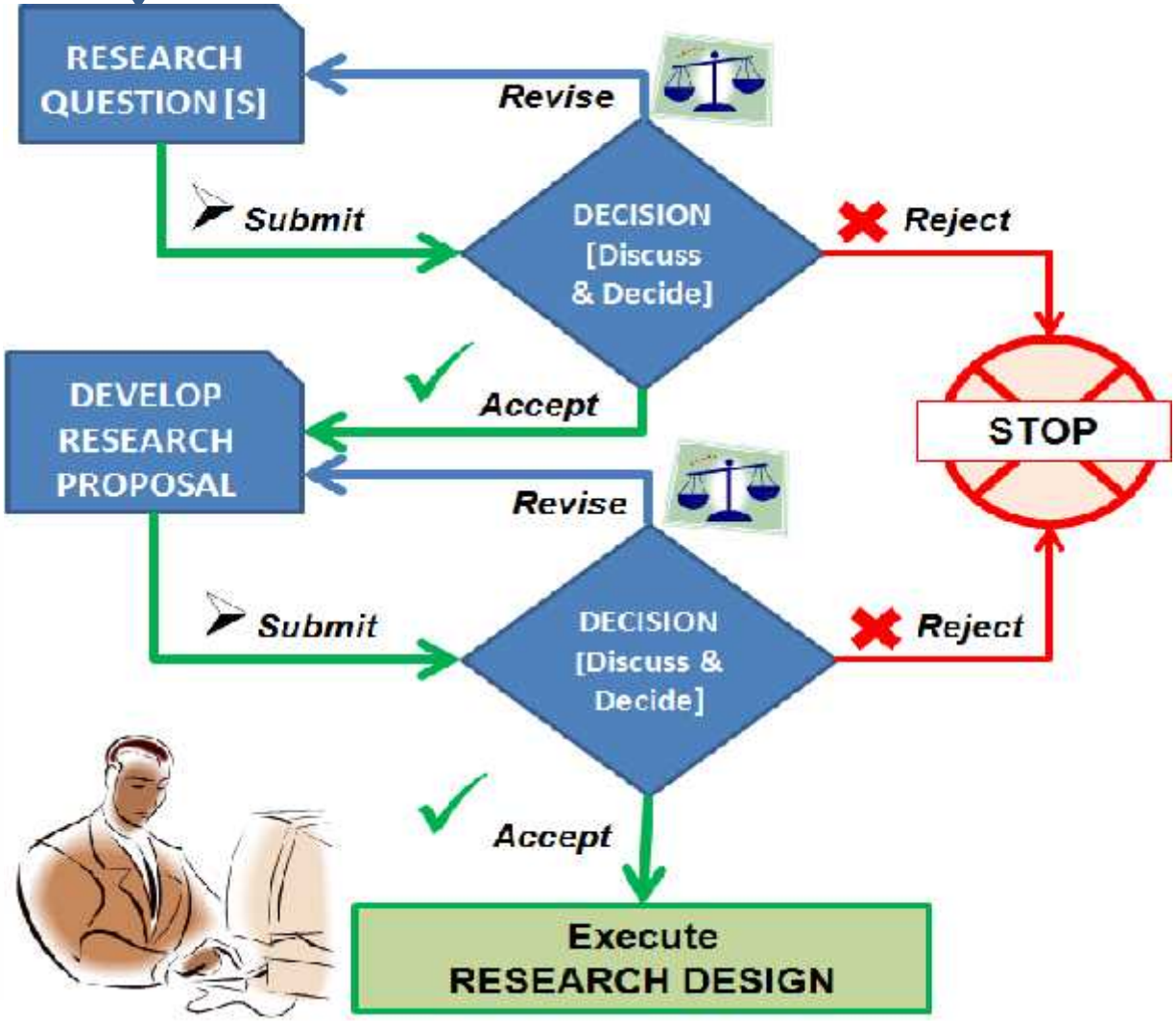
Several research questions may be formulated at this stage, for discussion with the relevant person, and to be agreed.

FORMULATING OF RESEARCH QUESTION [S]

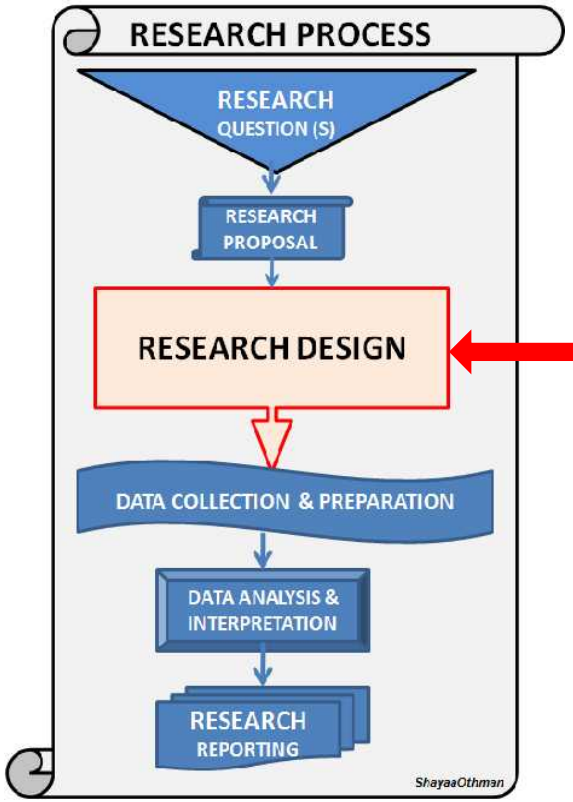
2. RESEARCH PROPOSAL PROCESS

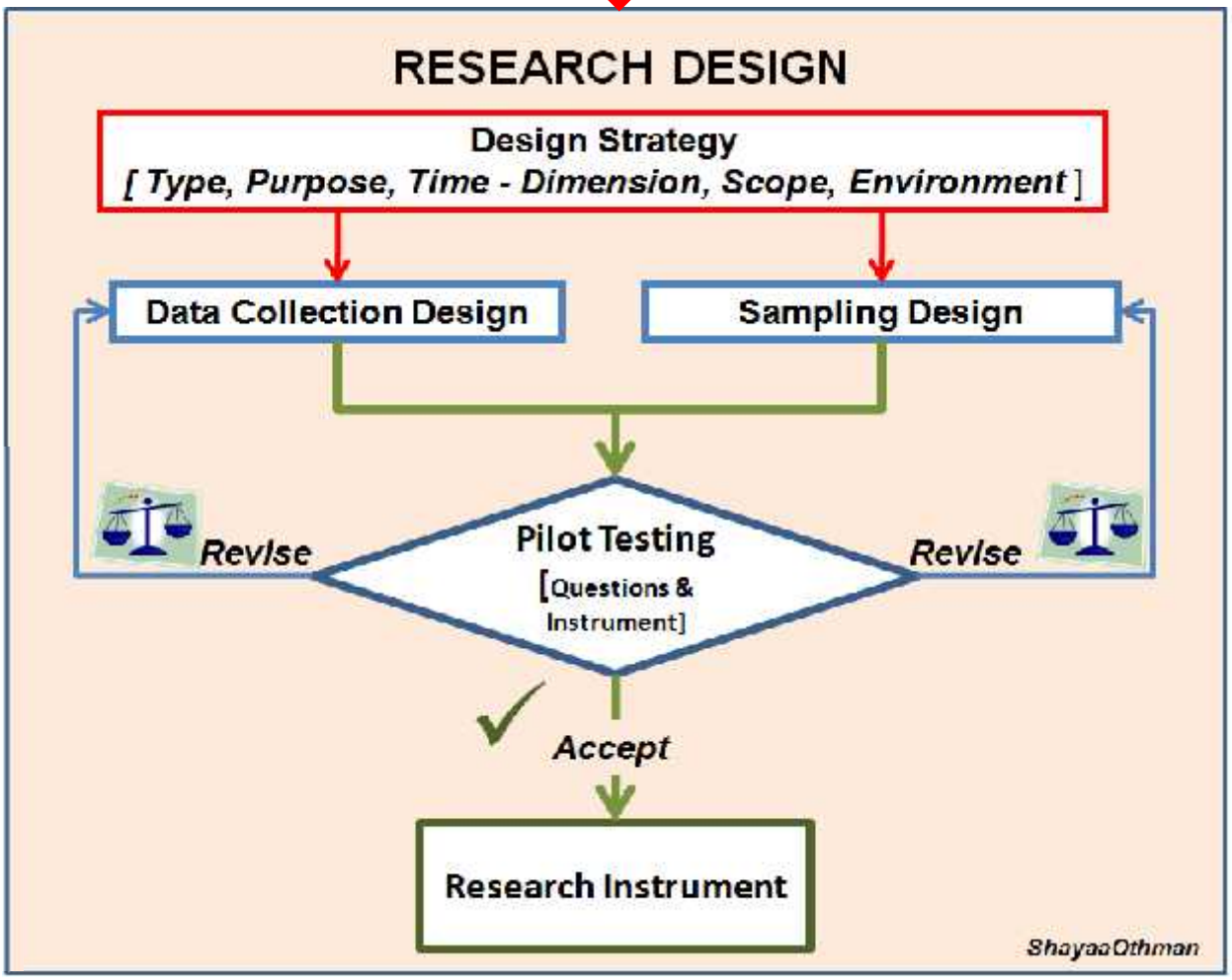
Process Cadangan Penyelidikan





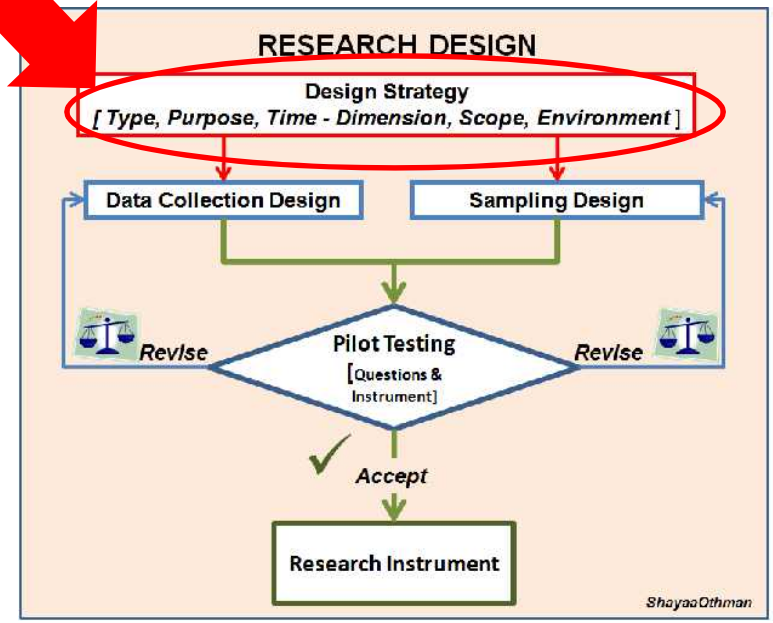
3. RESEARCH DESIGN





Design Strategy
[Type, Purpose, Time - Dimension, Scope, Environment]

1. Types of Research



2. Purpose of Study

[a] Descriptive Studies : ***Research is concerned with finding out who, what, where, when, or how many.***

[b] Causal Studies: ***Research is concerned with learning why –that is, how one variable produces changes in another – it causal.. Explaining relationships among variables***

3 Time Dimension ;

[a] Cross-sectional Studies : ***Study carried out once and represent snap-shot of one point at a time.***

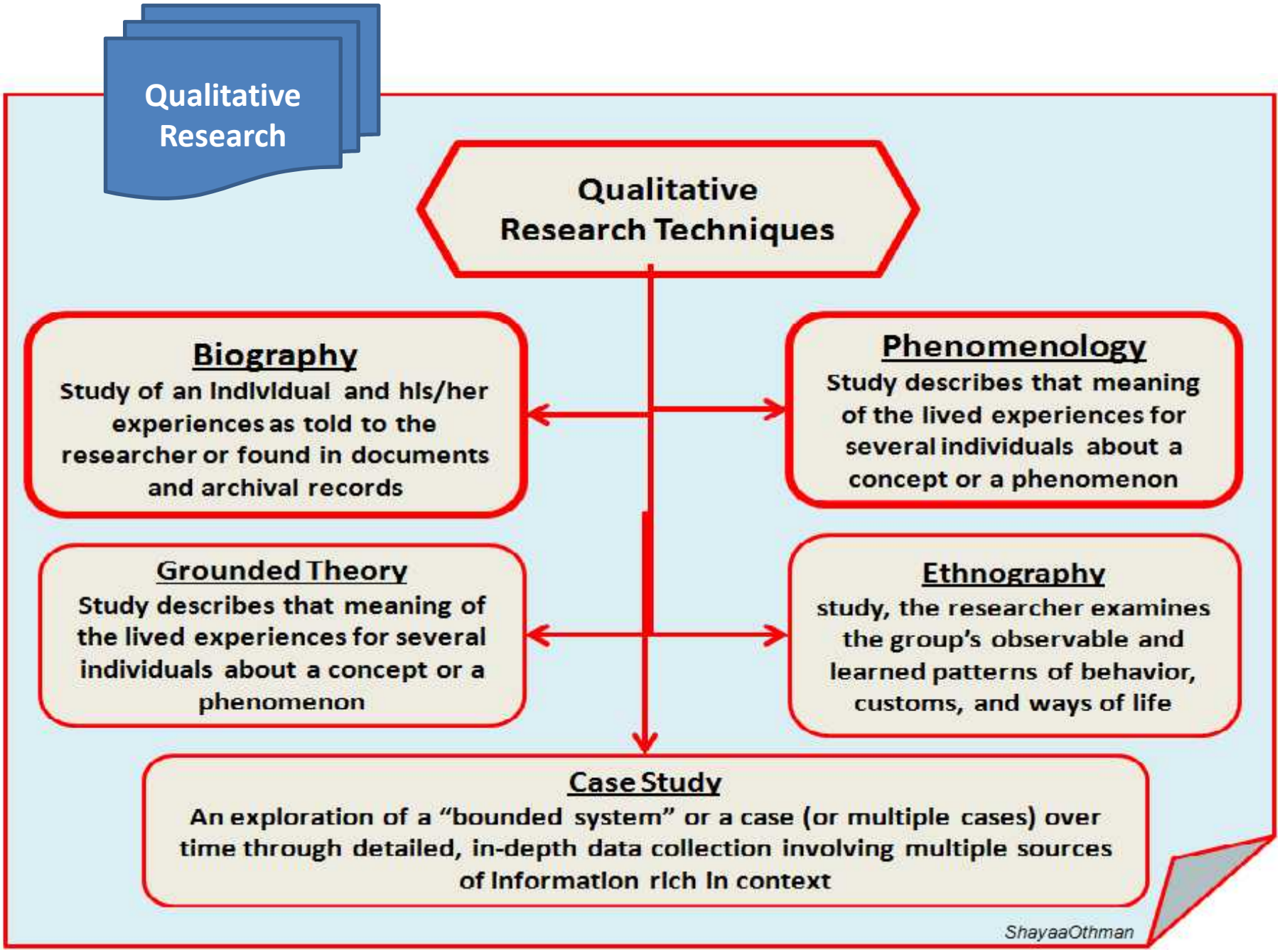
[b] Longitudinal Studies: ***Study repeated over an extended period***

4. Scope :

[a] Statistical Studies: ***Designed for breath rather than depth. Hypotheses tested quantitatively. Inferences and Generalization of population. From samples.***

[b] Case Studies ***: Hypotheses tested qualitatively. May provide major challenges to theory & for new hypothesis***

5. Research Environment ***; Field Conditions or laboratory conditions or simulation***

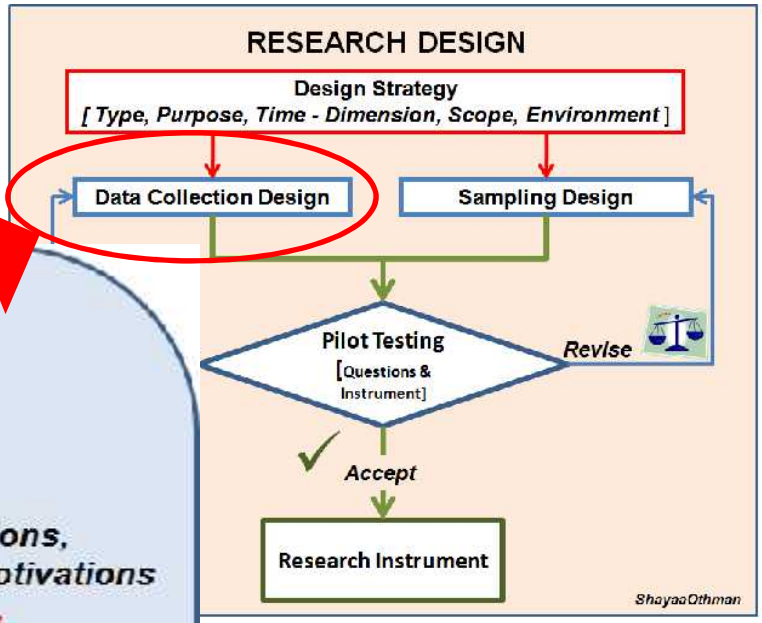

Qualitative Research
Qualitative Research Techniques
Biography
Study of an Individual and his/her experiences as told to the researcher or found in documents and archival records
Phenomenology
Study describes that meaning of the lived experiences for several individuals about a concept or a phenomenon
Grounded Theory
Study describes that meaning of the lived experiences for several individuals about a concept or a phenomenon
Ethnography
study, the researcher examines the group's observable and learned patterns of behavior, customs, and ways of life
Case Study
An exploration of a "bounded system" or a case (or multiple cases) over time through detailed, in-depth data collection involving multiple sources of information rich in context
ShayaaOthman

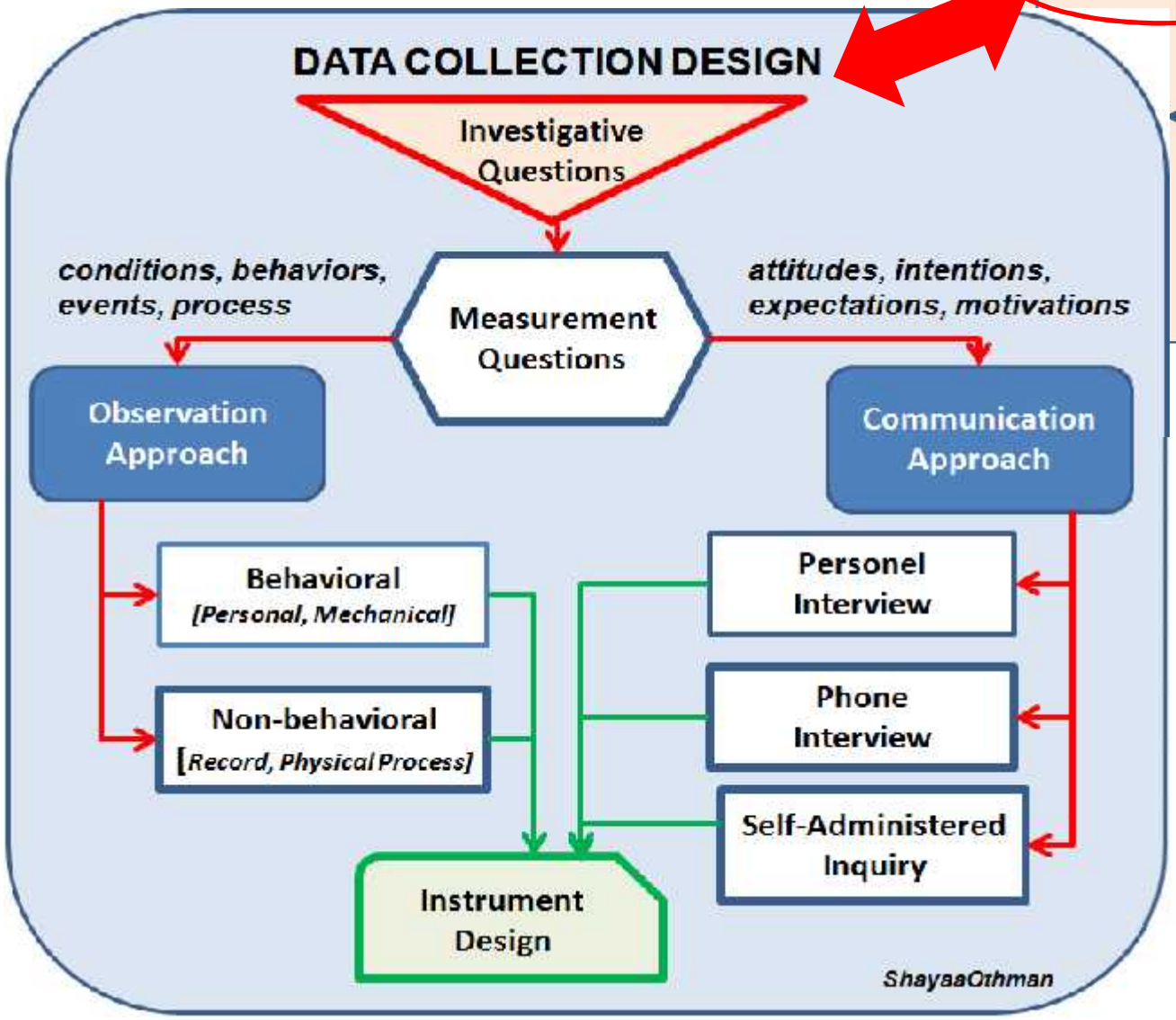
COMPARING QUALITATIVE & QUANTITATIVE RESEARCH

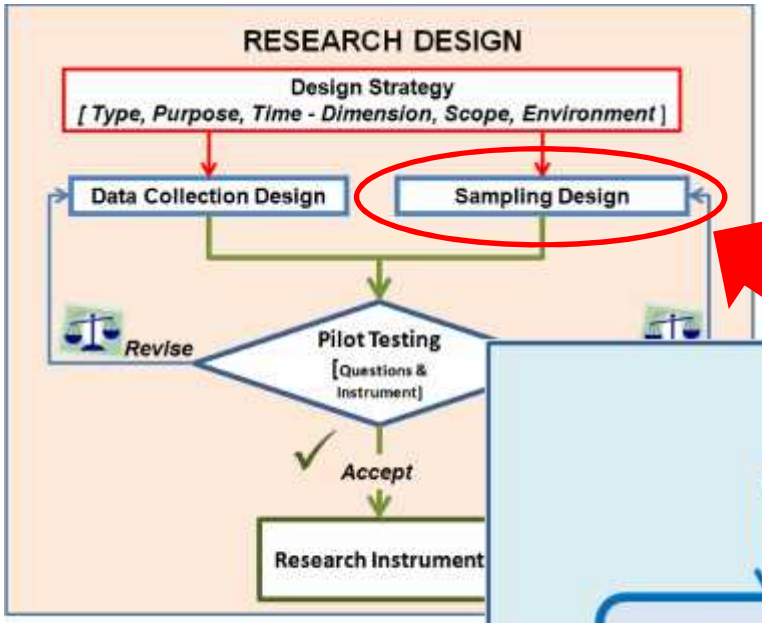
Qualitative Research	RESEARCH ASPECT	Quantitative Research
Discover Ideas, with General Research Objects	**COMMON PURPOSE**	Test Hypotheses or Specific Research Questions
Observe and Interpret	**APPROACH**	Measure and Test
Unstructured. Free Form	**DATA COLLECTION APPROACH**	Structured Response Categories Provided
Research is intimately involved. Results are subjective	**RESEARCHER INDEPENDENCE**	Researcher uninvolved Observer. Results are Objective
Small samples –Often in Natural setting	**SAMPLES**	Large samples to Produce Generalizable Results [Results that Apply to Other Situations]

Data Collection Design

[Reka Bentuk Pengumpulan Data]



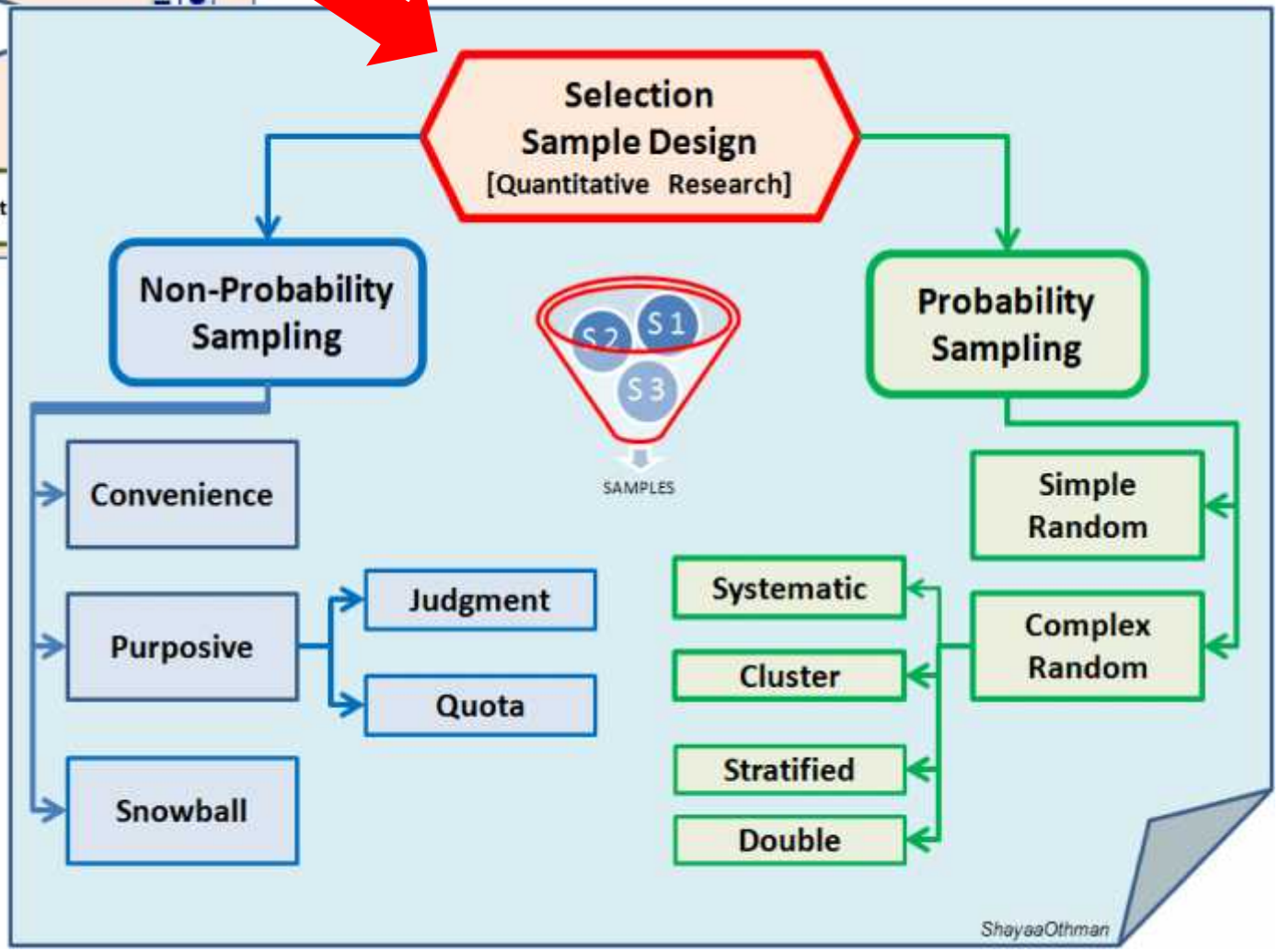




Sampling Design

Quantitative Research

[Reka Bentuk Sampel – Penyelidikan Kuantitatif]



COMPARISION OF PROBABILITY SAMPLING DESIGN

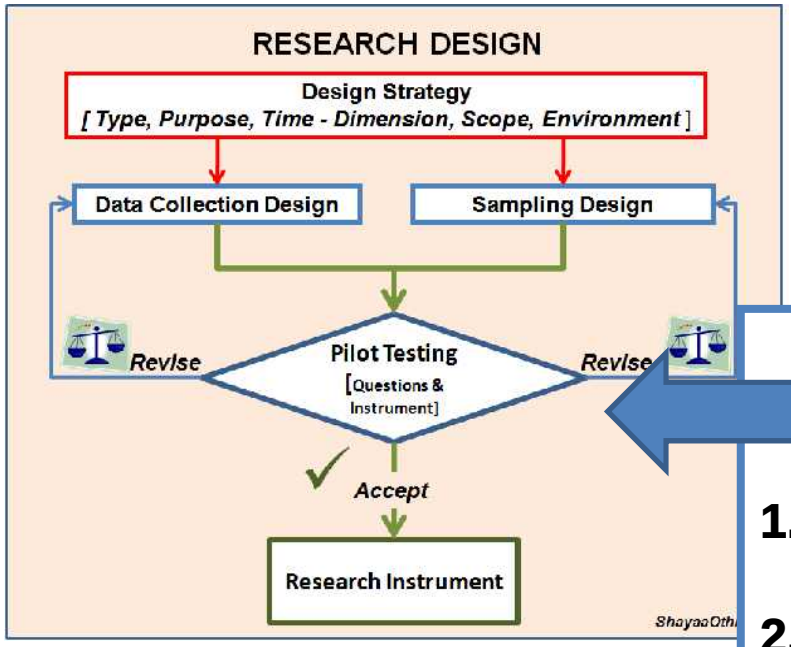
SAMPLING DESIGN	DESCRIPTION	ADVANTAGES	DISADVANTAGES
Simple Random	Each population element has equal chance of being selected into the sample. Sample drawn using random number table/generator	Easy to implement with automatic dialing [random digit dialing] and with computer voice response system.	Requires a listing of population elements. More time to implement. Use larger sample sizes. Produces larger errors. Expansive
Systematic	Selects an element of the population at a beginning with a random start and following the sample fraction selects every *k*th items	Simple to design. Easier to use than Simple Random. Easy to determine sampling distribution of mean or proportion. Less expansive than simple random	Periodicity within the population may skew the sample and result. If the population list has a monotonic trend, a biased estimate will result based on the start point.
Stratified	Divides population into sub-populations or strata and uses simple random on each strata. Results may be weighted and combined	Researcher controls sample size in strata. Increased statistical efficiency. Provides data to represent and analyze subgroups. Enables use of different methods in strata.	Increased error will result if subgroups are selected at different rates. Expansive. Especially expansive if strata on the population has to be created.

Continued next page

COMPARISION OF PROBABILITY SAMPLING DESIGN

[Continuation from previous page]

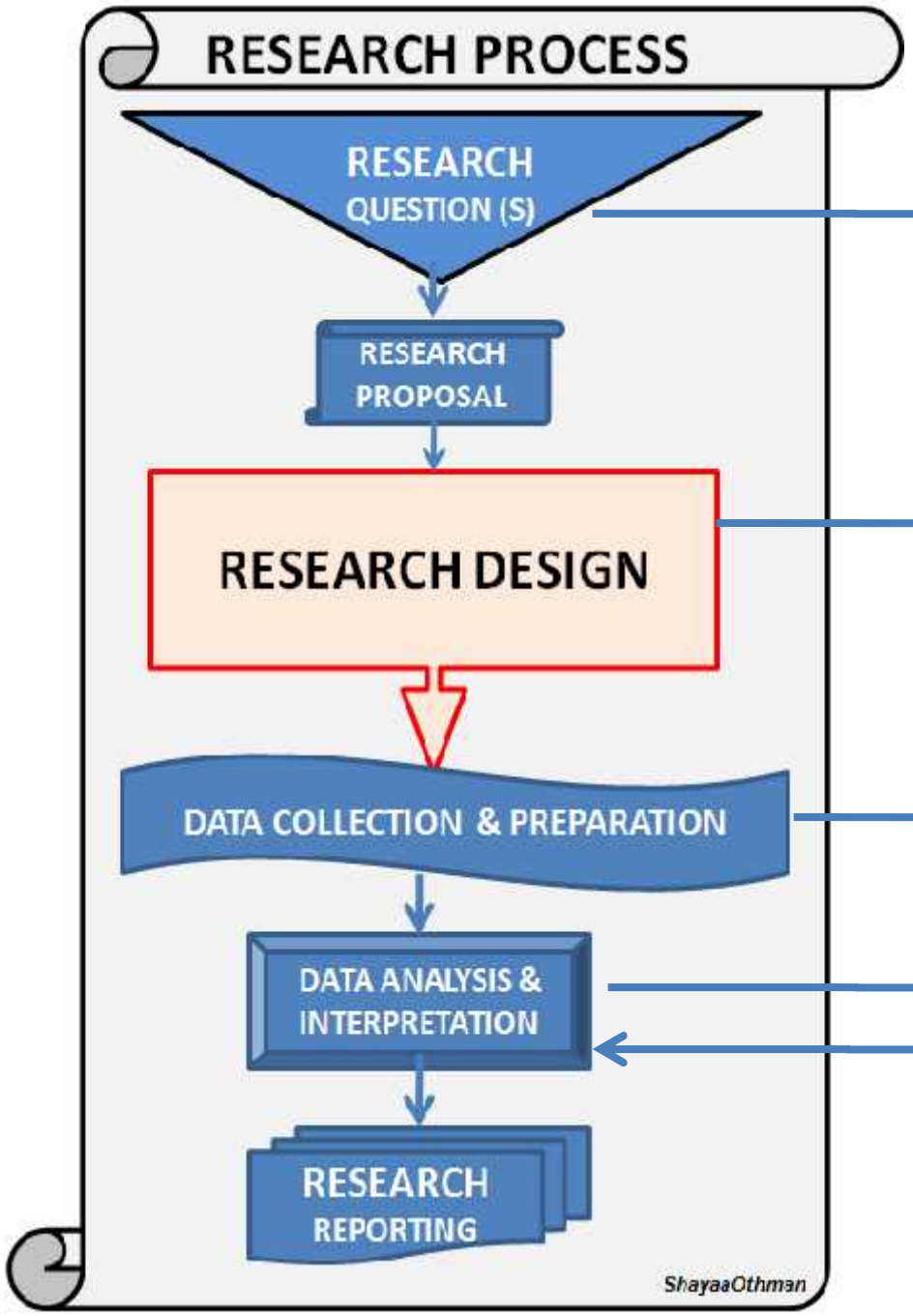
SAMPLING DESIGN	DESCRIPTION	ADVANTAGES	DISADVANTAGES
Custer	Population is divided into internally heterogeneous sub-groups. Some are randomly selected for further study	Provides an unbiased estimate of population parameter if properly done. Economically more efficient than simple random. Lowest cost per sample, especially with geographic clusters. Easy to do without population lists	Often lower statistical efficiency [more errors due to sub group being homogenous rather than heterogeneous.
Double [Sequential or Multiphase]	Process includes collecting data from a sample using a previously defined technique; based on the information found, selecting for sub samples for further study.	May reduce costs if first stage results in enough data to stratify or cluster the population	Increased costs if indiscriminately used.



PILOT TESTING

PILOT TESTING

1. It is meant to detect weakness in design and instrumentation.
2. If the survey is big than a complete pilot testing may be carried out to detect weakness at all levels – design & instrumentation, suitability of sampling design, and also the adequacy of data for statistical analysis.
3. A pilot testing may be carried out restricted to data collection activities only.
4. The cost of the Research study, as well as its time frame, may be estimated from the pilot study.
5. It helps to refine the Research Hypotheses



HYPOTHESES TESTING

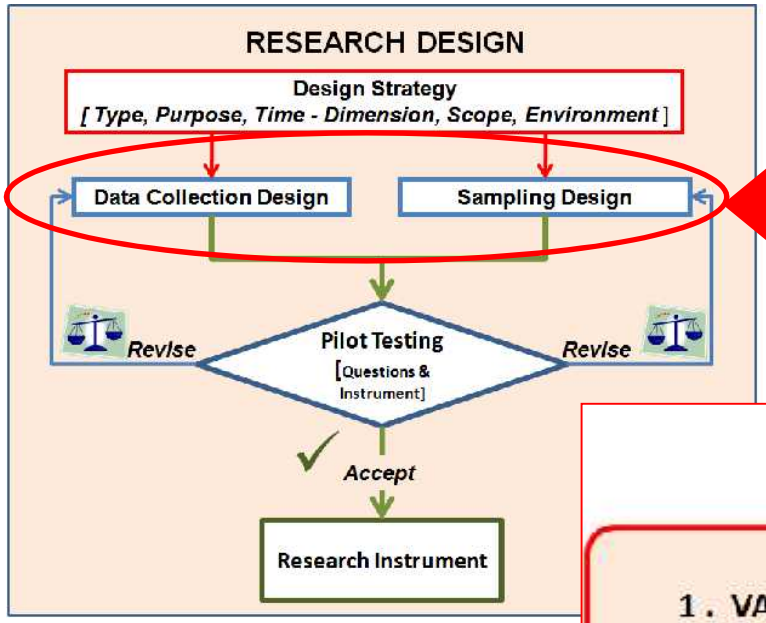
Formulate Preliminary Hypotheses

Preliminary Analysis Planning

Refine Hypotheses

Data Visualization

Hypotheses Testing



Characteristics of Sound Research

1 . VALIDITY

External Validity
Data is able to be generalized across persons, setting, and times
[References to sampling]

Internal Validity
The ability of research instrument to measure what it is purported to measure

2. REALIBILITY

Consistency – measure supplies consistent result

3. PRACTICALITY

1. Economy
Some trade-off between ideal research project and the budget.

2. Convenience
Easy to administer. Easy to complete questionnaire correctly.

3. Interpretability
Relevant when persons other than the test designers must interpret the result

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